

S/N 10/033,322

PATENTIn the Claims

1. (Currently Amended) A component built-in module comprising:
a core layer formed of an electric insulating material;
an electric insulating layer formed on at least one surface of the core layer; and
a ~~plurality of~~ wiring pattern[[s]] formed on ~~at least one~~ a surface of the electric insulating
~~core~~ layer; wherein:

the core layer and the electric insulating layer are formed of different electric insulating materials;

C1 the electric insulating material of the core layer is formed of a mixture comprising at least an inorganic filler and a thermosetting resin;

at least one selected from the group consisting of active components and passive components is contained in an internal portion of the core layer;

the core layer has a ~~plurality of~~ wiring pattern[[s]] and a ~~plurality of an~~ inner via[[s]]
~~formed of a conductive resin;~~

the wiring pattern of the core layer is electrically connected to the wiring pattern formed on the electric insulating layer; and

the electric insulating material formed of the mixture comprising at least an inorganic filler and a thermosetting resin of the core layer has a modulus of elasticity at room temperature in the range from 0.6 GPa to 10 GPa.

152. (Currently Amended) A component built-in module comprising:
a core layer formed of an electric insulating material;
an electric insulating layer formed on at least one surface of the core layer; and
a ~~plurality of~~ wiring pattern[[s]] formed on ~~at least one~~ a surface of the electric insulating
~~core~~ layer; wherein:

the core layer and the electric insulating layer are formed of different electric insulating materials;

the electric insulating material of the core layer is formed of a mixture comprising at least an inorganic filler and a thermosetting resin;

S/N 10/033,322

PATENT

at least one selected from the group consisting of active components and passive components is contained in an internal portion of the core layer;

the core layer has a ~~plurality of wiring pattern[[s]] and a plurality of an inner via[[s]]~~
~~formed of a conductive resin;~~

the wiring pattern of the core layer is electrically connected to the wiring pattern formed on the electric insulating layer;

the electric insulating material formed of the mixture comprising at least an inorganic filler and a thermosetting resin of the core layer has a modulus of elasticity at room temperature in the range from 0.6 GPa to 10 GPa; and

the thermosetting resin comprise a plurality of thermosetting resins having different glass transition temperatures.

25/ (Currently Amended) A component built-in module comprising:

a core layer formed of an electric insulating material;

an electric insulating layer formed on at least one surface of the core layer; and

a ~~plurality of wiring pattern[[s]]~~ formed on ~~at least one~~ a surface of the electric insulating
~~core layer; wherein:~~

the core layer and the electric insulating layer are formed of different electric insulating materials;

the electric insulating material of the core layer is formed of a mixture comprising at least an inorganic filler and a thermosetting resin;

at least one selected from the group consisting of active components and passive components is contained in an internal portion of the core layer;

the core layer has a ~~plurality of wiring pattern[[s]] and a plurality of an inner via[[s]]~~
~~formed of a conductive resin;~~

the wiring pattern of the core layer is electrically connected to the wiring pattern formed on the electric insulating layer;

the electric insulating material formed of the mixture comprising at least an inorganic filler and a thermosetting resin of the core layer has a modulus of elasticity at room temperature in the range from 0.6 GPa to 10 GPa; and

S/N 10/033,322

PATENT

the thermosetting resin comprises at least a thermosetting resin having a glass transition temperature in the range from -20°C to 60°C and a thermosetting resin having a glass transition temperature in the range from 70°C to 170°C.

C1 ~~2/4~~ (Withdrawn) The component built-in module according to claim 1, comprising a through hole that extends through all of the core layer, the electric insulating layer and the wiring pattern.

~~3/5~~ (Previously amended) The component built-in module according to claim 1, comprising a core layer formed of an electric insulating material; an electric insulating layer comprising an electric insulating material formed of a mixture including an inorganic filler and a thermosetting resin, which is formed on at least one surface of the core layer; and a plurality of wiring patterns formed of a copper foil; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin, and the wiring patterns are connected electrically to each other by the inner vias.

~~4/6~~ (Withdrawn) The component built-in module according to claim 1, comprising a core layer formed of an electric insulating material; an electric insulating layer comprising an insulating material formed of a thermosetting resin, which is formed on at least one surface of the core layer; and a plurality of wiring patterns formed by copper-plating; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin, and the wiring patterns formed by the copper-plating are connected electrically to each other by the inner vias.

~~5/~~ (Withdrawn) The component built-in module according to claim 1, comprising a core layer formed of an electric insulating material; an electric insulating layer formed of an organic film having thermosetting resins on both surfaces, which is formed on at least one

S/N 10/033,322

PATENT

surface of the core layer; and a plurality of wiring patterns formed of a copper foil; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin, and the wiring patterns are connected electrically to each other by the inner vias.

6/8. (Withdrawn) The component built-in module according to claim 1, comprising a core layer formed of an electric insulating material; and a ceramic substrate having a plurality of wiring patterns and inner vias adhered onto at least one surface of the core layer; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin.

7/9. (Withdrawn) The component built-in module according to claim 1, comprising a core layer formed of an electric insulating material; and a plurality of ceramic substrates having a plurality of wiring patterns and inner vias adhered onto at least one surface of the core layer; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin; and the plurality of ceramic substrates comprise dielectric materials having different dielectric constants.

8/10. (Previously amended) The component built-in module according to claim 1, wherein a film-shaped passive component is disposed between the wiring patterns formed on at least one surface of the core layer.

9/11. (Original) The component built-in module according to claim 10, where the film-shaped passive component is at least one selected from the group consisting of a resistor, a

S/N 10/033,322

PATENT

capacitor and an inductor formed of a thin film or a mixture comprising an inorganic filler and a thermosetting resin.

¹⁰/₁₂ (Original) The component built-in module according to claim ⁸/₁₀, where the film-shaped passive component is a solid electrolytic capacitor formed of at least an oxide layer of aluminum or tantalum and a conductive macromolecule.

C' 13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

¹⁶/₂₃ (Withdrawn) The component built-in module according to claim ¹⁵/₂, comprising a through hole that extends through all of the core layer, the electric insulating layer and the wiring pattern.

S/N 10/033,322

PATENT

²⁶
~~24~~. (Withdrawn) The component built-in module according to claim ²⁵~~3~~, comprising a through hole that extends through all of the core layer, the electric insulating layer and the wiring pattern.

C! ¹⁷
~~25~~. (Previously added) The component built-in module according to claim ¹⁵~~2~~, comprising a core layer formed of an electric insulating material; an electric insulating layer comprising an electric insulating material formed of a mixture including an inorganic filler and a thermosetting resin, which is formed on at least one surface of the core layer; and a plurality of wiring patterns formed of a copper foil; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin, and the wiring patterns are connected electrically to each other by the inner vias.

²⁷
~~26~~. (Previously added) The component built-in module according to claim ²⁵~~3~~, comprising a core layer formed of an electric insulating material; an electric insulating layer comprising an electric insulating material formed of a mixture including an inorganic filler and a thermosetting resin, which is formed on at least one surface of the core layer; and a plurality of wiring patterns formed of a copper foil; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin, and the wiring patterns are connected electrically to each other by the inner vias.

¹⁸
~~27~~. (Withdrawn) The component built-in module according to claim ¹⁵~~2~~, comprising a core layer formed of an electric insulating material; an electric insulating layer comprising an insulating material formed of a thermosetting resin, which is formed on at least one surface of the core layer; and a plurality of wiring patterns formed by copper-plating; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias

S/N 10/033,322

PATENT

formed of a conductive resin, and the wiring patterns formed by the copper-plating are connected electrically to each other by the inner vias.

28. (Withdrawn) The component built-in module according to claim²⁵~~2~~, comprising a core layer formed of an electric insulating material; an electric insulating layer comprising an insulating material formed of a thermosetting resin, which is formed on at least one surface of the core layer; and a plurality of wiring patterns formed by copper-plating; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin, and the wiring patterns formed by the copper-plating are connected electrically to each other by the inner vias.

29. (Withdrawn) The component built-in module according to claim¹⁵~~2~~, comprising a core layer formed of an electric insulating material; an electric insulating layer formed of an organic film having thermosetting resins on both surfaces, which is formed on at least one surface of the core layer; and a plurality of wiring patterns formed of a copper foil; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin, and the wiring patterns are connected electrically to each other by the inner vias.

30. (Withdrawn) The component built-in module according to claim²⁵~~3~~, comprising a core layer formed of an electric insulating material; an electric insulating layer formed of an organic film having thermosetting resins on both surfaces, which is formed on at least one surface of the core layer; and a plurality of wiring patterns formed of a copper foil; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias

S/N 10/033,322

PATENT

formed of a conductive resin, and the wiring patterns are connected electrically to each other by the inner vias.

20/31. (Withdrawn) The component built-in module according to claim ¹⁵2, comprising a core layer formed of an electric insulating material; and a ceramic substrate having a plurality of wiring patterns and inner vias adhered onto at least one surface of the core layer; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin.

30/32. (Withdrawn) The component built-in module according to claim ²⁵3, comprising a core layer formed of an electric insulating material; and a ceramic substrate having a plurality of wiring patterns and inner vias adhered onto at least one surface of the core layer; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin.

21/33. (Withdrawn) The component built-in module according to claim ¹⁵2, comprising a core layer formed of an electric insulating material; and a plurality of ceramic substrates having a plurality of wiring patterns and inner vias adhered onto at least one surface of the core layer; wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin; and the plurality of ceramic substrates comprise dielectric materials having different dielectric constants.

31/34. (Withdrawn) The component built-in module according to claim ²⁵3, comprising a core layer formed of an electric insulating material; and a plurality of ceramic substrates having a plurality of wiring patterns and inner vias adhered onto at least one surface of the core layer;

S/N 10/033,322

PATENT

wherein the core layer has a plurality of wiring patterns formed of a copper foil and a plurality of inner vias formed of a conductive resin; and the plurality of ceramic substrates comprise dielectric materials having different dielectric constants.

²²
~~35.~~ (Previously added) The component built-in module according to claim ¹⁵~~2~~, wherein a film-shaped passive component is disposed between the wiring patterns formed on at least one surface of the core layer.

³²
~~36.~~ (Previously added) The component built-in module according to claim ²⁵~~3~~, wherein a film-shaped passive component is disposed between the wiring patterns formed on at least one surface of the core layer.

C1 ¹¹
~~37.~~ (Previously added) The component built-in module according to claim 1, wherein the component is not built into the electric insulating layer provided on at least one surface of the core layer.

¹²
~~38.~~ (Previously added) The component built-in module according to claim 1, wherein the glass transition temperature of the electric insulating material of the core layer is different from the glass transition temperature of the electric insulating material of the electric insulating layer provided on at least one surface of the core layer.

²³
~~39.~~ (Previously added) The component built-in module according to claim ¹⁵~~2~~, wherein the component is not built into the electric insulating layer provided on at least one surface of the core layer.

²⁴
~~40.~~ (Previously added) The component built-in module according to claim ¹⁵~~2~~, wherein the glass transition temperature of the electric insulating material of the core layer is different from the glass transition temperature of the electric insulating material of the electric insulating layer provided on at least one surface of the core layer.

S/N 10/033,322

PATENT

³³
~~41.~~ (Previously added) The component built-in module according to claim ²⁵~~3~~, wherein the component is not built into the electric insulating layer provided on at least one surface of the core layer.

³⁴
~~42.~~ (Previously added) The component built-in module according to claim ²⁵~~3~~, wherein the glass transition temperature of the electric insulating material of the core layer is different from the glass transition temperature of the electric insulating material of the electric insulating layer provided on at least one surface of the core layer.

C1 [Please add the following claims:]

¹³
~~43.~~ The component built-in module according to claim 1, wherein the wiring pattern of the core layer and the at least one selected from the group consisting of active components and passive components are electrically connected to the wiring pattern formed on the electric insulating layer.

¹⁴
~~44.~~ The component built-in module according to claim 1, wherein at least two electric insulating layers are formed on the core layer, wiring patterns are formed on the surface of the at least two electric insulating layers, and the wiring pattern of the core layer is electrically connected to the wiring patterns formed on the at least two electric insulating layers.
